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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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EXAMINER

RODRIGUEZ, ARMANDO

ART UNIT PAPER NUMBER

2828

DATE MAILED: 07/31/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/498,703

Applicant(s)

TRISNADI, JAHJA I.

Examiner

Armando Rodriguez

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 May 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-68 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 19-46 is/are allowed.
- 6) ☒ Claim(s) 1-10, 12-18, 24, 53, 56-60, 62-64 and 67 is/are rejected.
- 7) ☒ Claim(s) 11, 54, 55, 61, 66 and 68 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) ✓
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6, 7. ✓
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claims 1-10,12-18,44-53,56-60,62-65 and 67 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 47-49 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is not clear from the claim language of the relation applicant has established between the diverging in a first direction, scanning in a second direction, a first scan and a second scan.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-10,12-18,50-52,56-58 and 63-65,67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scully (PN 4,511,220) in view of applicant's admitted prior art Goodman (Some fundamental properties of speckle).

Regarding claims 1,3,5,7,8,12,16 and 63.

Scully illustrates in figure 2 a laser system arrangement to eliminate speckle, the arrangement having a half waveplate (22), a polarizing beam splitter (32) which divides the laser beam from laser (100) into two beams (210) and beam (220). Beam (220) is reflected by beam splitter (32) and guided through a path difference via reflecting right angle prism (40), while beam (210) is transmitted through beam splitter (32). Both beams are recombined at polarizing beam splitter (44).

Scully does not disclose which particular target the output beam is illuminated on or a depolarizing screen.

On page 3 lines 6-12 of the disclosure, as admitted by applicant, Goodman teaches that a 100% depolarizing screen receiving two orthogonal components from a light beam will produce a reduced speckle pattern.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to combine the teachings of Goodman of a depolarization screen with the laser system arrangement of Scully because the laser system of Scully would provide the depolarization screen with a two orthogonal component light beam, which will result in the reduction of speckle pattern.

Regarding the limitation of the coherence length, Scully discloses in the abstract, in column 2 lines 64-68 and in column 3 lines 1-5 that exceeding the known coherence length will not produce speckle fields. Therefore, discovering an optimum value or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Regarding claim 2 and 67.

Scully does not disclose a plurality of mirrors as the light guide but discloses a reflecting right angle mirror as the reflecting guide.

It would have been obvious to a person having ordinary skill in the art to replace the reflecting right angle prism with mirrors because both the reflecting right angle prism and the mirrors provide the same function, which is to provide a different path for producing a two orthogonal light beam, thereby reducing the speckle pattern.

Regarding claims 4,6,9,10,17 and 18.

On page 3 of the disclosure, as admitted by applicant, Goodman teaches that a 100% depolarizing screen receiving two orthogonal components from a light beam will produce a reduced speckle pattern.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to use a depolarizing screen because it would reduce the speckle pattern as implied by Goodman.

Regarding claims 13-15, 64 and 65.

Scully illustrates in figure 2 polarized beam splitter dividing beam (200) into two beams (210) and (220), where both beams are recombined by polarizing beam splitter (44).

It would be obvious to a person of ordinary skill in the art to divide and recombine using one beam splitter because the teaching of dividing and recombining to produce a two orthogonal light beam for reducing speckle pattern via beam splitters, is disclosed.

Regarding claims 50,53 and 56.

Scully discloses the use of a single laser system, where to obtain a reduce speckle pattern the beam is split into two orthogonal light beam components and combined.

Scully does not disclose the use of multiple lasers.

However, use of multiple lasers would be obvious and involves only routine skill in the art since the requirement to reduce speckle pattern is to combine the beams with orthogonal components, as disclosed by Scully.

Regarding claims 51,52,57and 58

On page 3 of the disclosure, as admitted by applicant, Goodman teaches that a 100% depolarizing screen receiving two orthogonal components from a light beam will produce a reduced speckle pattern.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to use a depolarizing screen because it would reduce the speckle pattern as implied by Goodman.

Claims 59,60 and 62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scully (PN 4,511,220) in view of Hill (PN 5,862,164) and applicant's admitted prior art Goodman (Some fundamental properties of speckle).

Scully illustrates in figure 2 a laser system arrangement to eliminate speckle, the arrangement having a half waveplate (22), a polarizing beam splitter (32) which divides the laser beam from laser (100) into two beams (210) and beam (220). Beam (220) is reflected by beam splitter (32) and guided through a path difference via reflecting right

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angle prism (40), while beam (210) is transmitted through beam splitter (32). Both beams are recombined at polarizing beam splitter (44).

Scully does not disclose the use of an electro-optical polarization rotator or a depolarizing screen.

Hill discloses an electro-optical polarization rotator, as illustrated in figure 1, for producing two orthogonal light beam components.

On page 3 of the disclosure, as admitted by applicant, Goodman teaches that a 100% depolarizing screen receiving two orthogonal components from a light beam will produce a reduced speckle pattern.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to use the electro-optical polarization rotator of Hill in the laser system of Scully because it would produce with high efficiency a two orthogonal light beam component, which is received by the depolarization screen of Goodman to reduce the speckle pattern.

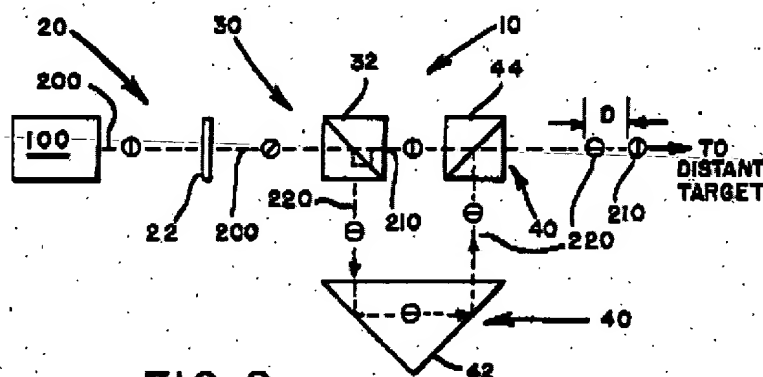


FIG. 2

Allowable Subject Matter

Claims 11, ~~44~~⁷ 49, 54, 55, 61, 66 and 68 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 47-49 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

None of the prior arts alone or in combination disclose the structural combination of dependent claims 11, 54, 55, 61, 66 and 68 along with limitations of the base claim and any intervening claims having fiber optic light guide, multiplayer dielectric, a birefringent crystal and half waveplate mechanically rotated.

Claims 19-43 and ~~44-49~~⁵⁰ are allowed.

Regarding claims 19-40.

None of the prior arts alone or in combination discloses the claimed laser system to reduce laser speckle having the structural combination of independent claims 19 and 34 in particular the limitation of oscillating the optical path length by at least a half wavelength of the first polarized laser output.

Regarding claims 41-43.

None of the prior arts alone or in combination discloses the claimed laser system to reduce laser speckle having the method of independent claim 41 in particular the step of oscillating the optical path length by at least a half wavelength of the first polarized laser output.

Regarding claims 44-46.

None of the prior arts alone or in combination discloses the claimed laser system for reducing laser speckle having the structural combination of independent claim 44, in particular having the means for switching between a first and second optical path length, where the path lengths have a difference of about an odd multiple of a half wavelength of the first polarized laser output, means to produce a fifth laser output and a scanning mirror coupled to the fifth laser output to create a line illumination.

Conclusion

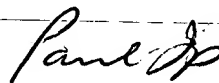
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Armando Rodriguez whose telephone number is (703) 308-6218. The examiner can normally be reached on 10-hour day / M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7721 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-4881.



Armando Rodriguez
Examiner
Art Unit 2828



Paul Ip
Supervisor
Art Unit 2828

AR/PI
July 22, 2002